REMARKS

The Examiner rejected remaining pending Claims 2-7, 17, 19-24 and 34 under 35 U.S.C. 103(a) as obvious over Tafas et al. (U.S. Patent No. 6,320,174). In reply to the applicants' response to the final action, the Examiner stated that the applicants' arguments were unpersuasive because the stage direction of motion described in col. 4 (lines 35 to end) and illustrated in Fig. 2 shows that different objectives would view the same portion of the object, thereby meeting the claim language requiring that "said microscope arrays sequentially scan and image a same area of the object during said scan of the scanning mechanism."

In support of his position, the Examiner referred to Fig. 2 and the objective on the far left, which would first observe grid location 3 and then move to view grid location 1 initially associated with the center objective, thereby having two objectives sequentially scan and view the same area of the object, and so on. Fig. 2 does not illustrate discrete arrays of objectives viewing the same area of the object but, rather, only individual objectives. Therefore, it is assumed that at least for that reason the Examiner rejected the claims as obvious, rather than as anticipated by Tafas.

The applicants respectfully disagree because, short of

anticipation, Tafas teaches nothing that could lead one skilled in the art to modify that invention to use "discrete two-dimensional arrays" scanning over the same portion of the sample object. The Tafas reference describes a microscope array wherein a plurality of optical elements is arranged in conventional manner with rows that are aligned in both the x and y directions of scan (clearly seen in Figs. 2, 3 and 5). The imaging process is carried out in conventional way, by a sequential, step-and-repeat, x-y scan (see also col. 4, lines 35-40). Thus, there would be no reason for separate arrays of microscopes, such as the ones arguably present in Fig. 4, to image portions of the object already imaged by other arrays. Indeed, nothing in Tafas suggests that mode of operation.

The Tafas microscope system is very different from the applicants' scanning microscope, both structurally and functionally. Tafas' works by imaging the object with a single array of objectives first viewing a portion of the object, then moving the array to repeat the imaging process over another portion of the object, and so on, scanning both in x and y directions, and finally stitching the various portions together to produce a picture of the object. The applicants' works by imaging the entire object with a single scan in a continuous motion with an array of microscopes that are staggered with respect to the direction of scan, so that each microscope covers

a continuous and substantially unique strip of the object. The two approaches are fundamentally different and inconsistent with one another.

Thus, one of the novel features of the microscope array of the present invention, which clearly underscores its difference from the Tafas microscope, lies in the two-dimensional arrangement of the optical elements constituting each array. As mentioned, they are arranged in staggered row configuration with respect to the direction of scan (see Figs. 4-8); that is, they are not aligned in that direction. This allows the scan to be implemented with a single linear motion (that is, continuous, rather than step-and-repeat, motion), so that each microscope covers a substantially non-overlapping strip of the object during the scan. Note that the motion does not necessarily have to be in a straight line, so long as it is along a continuous line. This combination of features, which makes it possible to cover the entire object with a single linear motion of scan, is totally inconsistent with the Tafas approach.

Therefore, nothing taught in the various embodiments disclosed by Tafas could reasonably be said to suggest or even relate to the present invention. In addition, the present invention also features the concept of using at least two separate arrays to sequentially image the object during the same scan under

different modalities of operation (such as two colors) to obtain and then combine different images of the object. This additional feature further distinguishes the present invention over Tafas.

In view of the foregoing, these additional limitations have been added to the remaining independent claims (2 and 19). Claim 6 was labeled as amended in response to the last action, but no amended language was mistakenly presented. Therefore, it is currently amended to correct that oversight. Claims 5 and 22 are being amended again to recite the original language ("planes" instead of "surfaces") because, after reconsideration, that language is deemed more appropriate to refer to different images with respect to the z direction, the intended meaning. All other claims remain unchanged.

In view of the reaction produced in the art by the concepts of the present invention, the applicants offer the following additional remarks for the Examiner's consideration. The concept of staggering the rows in an array of microscopes to obtain a complete image of the object by scanning in a single direction was first introduced in the art by the applicants' array microscope. Without this concept it is not possible, in practice, to accomplish one-directional scanning in a single pass. As a result of this new approach, the applicants have been able to develop a scanning microscope that is at least 5 times

faster than previous products, a true breakthrough in the field of scanning microscopy.

In less than four years, the applicants have progressed from a concept to a commercial product that is rapidly finding acceptance and recognition in the marketplace, even though it is radically different in function from all prior-art products (and therefore has to overcome preconceived notions about what works and reluctance to try what is new). The value of their contribution to the art has been recognized as a breakthrough in the industry, as evidenced by the several prizes for excellence they have been awarded. To wit, see:

- R&D 100 Award (2005, awarded by R&D Magazine to 100 Technologically Most Significant Products); see (under DMetrix) http://www.rdmag.com/ShowPR.aspx?PUBCODE=014&ACCT=1400000100&ISSUE=0509&RELTYPE=R100&PRODCODE=00000000&PRODLETT=AK

- 2005 Runner-up in The Wall Street Journal's International Technology Innovation Award for Medical Devices (a worldwide selection of one winner and five runner-ups); see http://www.dowjones.com/Pressroom/PressReleases/Other/US/2005/1024 US TheWallStreetJournal 500.htm

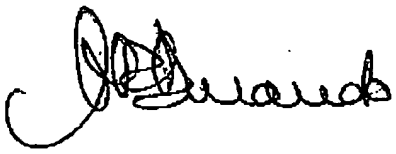
- Governor of Arizona Celebration of Innovation Award in Start-Up Category (2005); see https://www.aztechcouncil.org/article.cfm?id=476&nav=ATC

- University of Arizona's Optical Center's Innovators Honors Award (2005); see http://www.photonics.com/content/news/2005/April/4/62748.aspx

In view of the foregoing, the applicants respectfully submit that their invention represents a significant advance in the art that is totally different from and patentable over the Tafas et al. reference. Accordingly, reconsideration of the pending claims, as amended, is respectfully requested.

No fee is believed to be due with this response. Nevertheless, should any amount be due, please charge it to our Deposit Account No. 04-1935.

Respectfully submitted,



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